ALLOTMENT MANAGEMENT PLAN

CORVA AND DOUBLE A ALLOTMENTS

WILLIAMS RANGER DISTRICT – KAIBAB NATIONAL FOREST

Prepared By: /s/ Clare Hydock **Date** 1-15-2010

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Approved By: /s/ Martie Schramm **Date** 1/19/10

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District Ranger, Williams Ranger District

INTRODUCTION

This Allotment Management Plan (AMP) was developed following a Decision Notice for the Corva and Double A Allotments signed by Martie Schramm, Williams District Ranger, on September 9, 2009.

The Corva Allotment has 13,263 Forest Service acres (GIS derived) and is approximately four miles west of Williams and north of Interstate 40. The Double A Allotment has 43,665 Forest Service acres and is approximately nine miles northwest of Williams and north of Interstate 40. Grasslands, pinyon/juniper and ponderosa pine dominate the vegetation on the two joining allotments at an elevation ranging from 5,200 to 7,300 feet.

Figure 1. Location Map for Corva and Double A Allotments

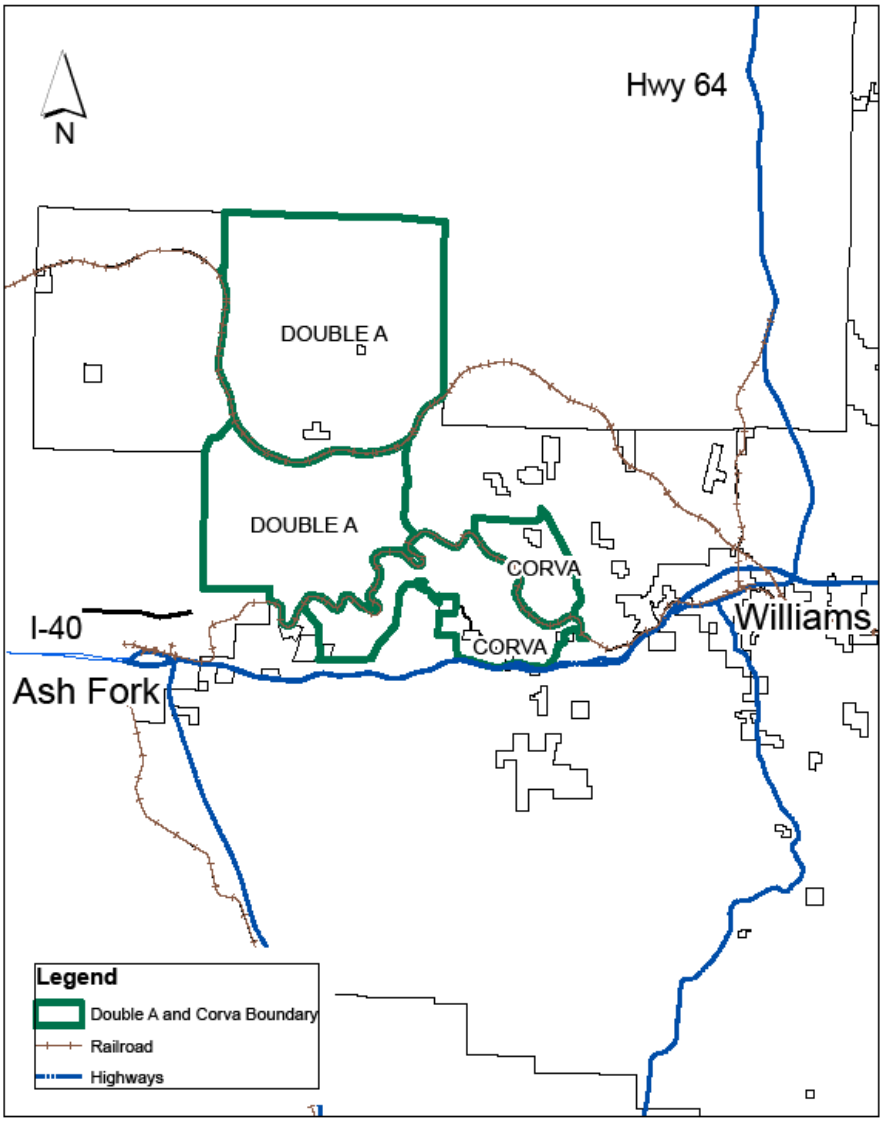
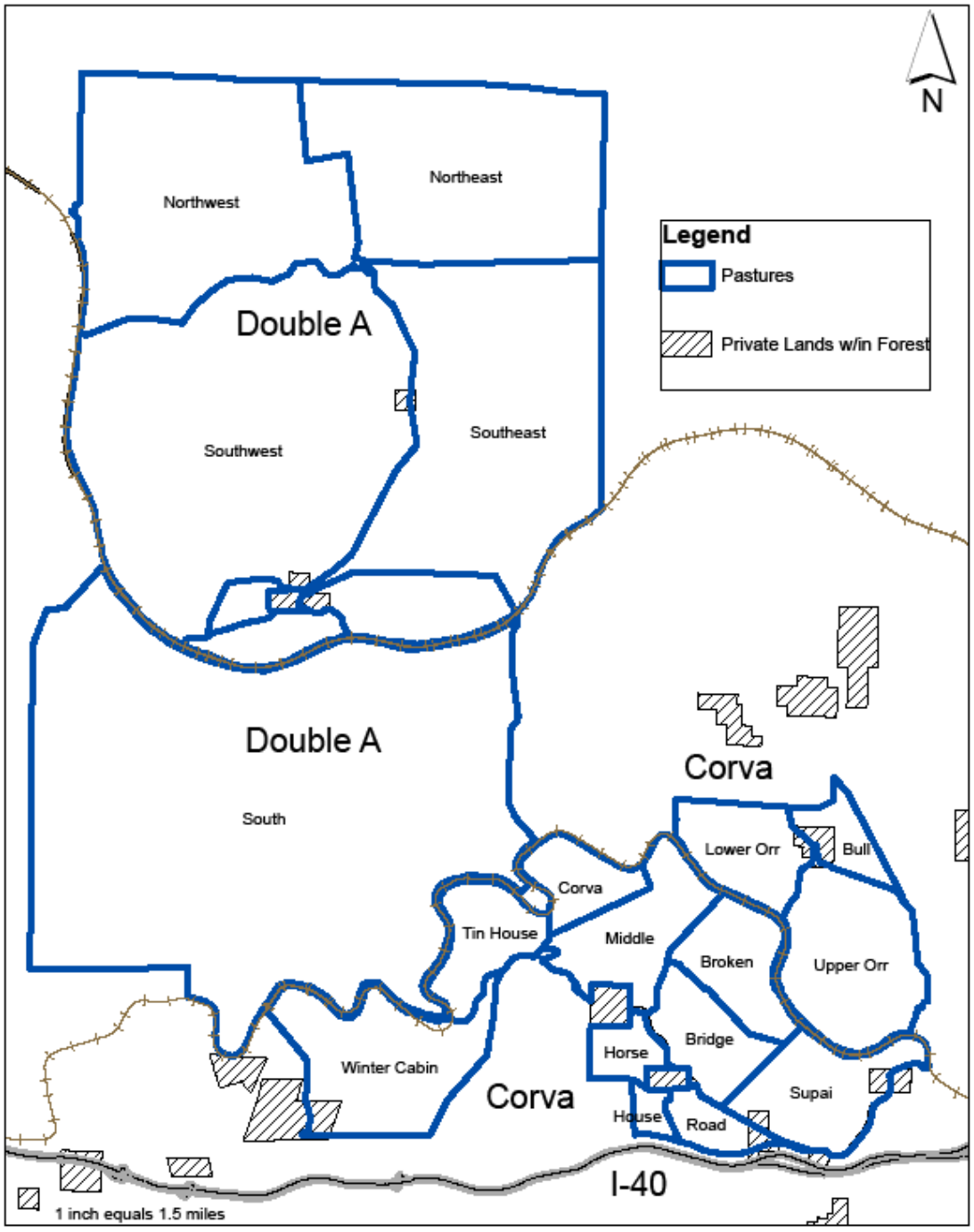


Figure 2. Corva and Double A Pastures



BACKGROUND

Corva Allotment

From 1875 to 1893 the Corva Allotment was unfenced and used in conjunction with surrounding allotments, primarily as sheep range. From 1893 to 1920 it was grazed by both cattle and sheep. From 1920 to1977 it was grazed by cattle, yearlong. Once fenced (sometime in the 1930's), several reductions in permitted livestock numbers were made.

The first reduction was in 1939, from 280 head to 252 head of adult cattle. These numbers were carried until 1947 when David W. Shivers sold to George L. Crowe and numbers were reduced to 225 head. The permit changed hands again in 1952 when Rod Graves acquired it.

Permitted numbers and season of use remained at 225 head yearlong until 1977 when the permit was acquired by Mr. and Mrs. James Jennings. The new permit was issued for 324 yearling cattle to be grazed from May 15 to October 30. The change in the season of use was made due to a lack of adequate winter range on the allotment.

Harry Robertson acquired the permit in 1987 for the same numbers (324 yearlings) and a season of use of May 15 to October 31 (1,811 HMs). Mr. Robertson kept the permit until 2005 when the 55 Ranch, LLC acquired it for the same numbers and season.

Actual use records indicate that from 1941 through 2008 there have been a number of years that some level of non-use was taken (see Table 1).

Table 1. Corva Allotment History of Use from 1941 to 2008.

Year(s)	Permitted Use Number and AUM's on Corva Allotment	Actual Use Number and AUM's	Comments
1941-1947	252 adult cattle yearlong; 3,024 AUM's	189-266 head; 2,116-2,034 AUM's	
1948-1975	225 adult cattle yearlong; 2,700 AUM's	143-233 head; 1,716-2,762 AUM's	
1976	225 adult cattle yearlong; 2,700 AUM's	0	Total non-use taken in 1976
1977	225 adult cattle from 5/1-12/31; 1,440 AUM's	225 head; 1,440 AUM's	
1978-1986	324 yearling cattle from 5/1-10/30; 1,246 AUM's	14-324 head; 75-1,323 AUM's	Total non-use taken in 1982 and 1984
1987-1994	324 yearling cattle from 5/15-10/31; 1,268 AUM's, 1,811 HM's	5-233 head; 29-1,279 AUM's	Total non-use taken in 1988
1995-1999	324 yearling cattle from 5/15-10/31; 1,268 AUM's, 1,811 HM's	No data found	
2000-2008	324 yearling cattle from 5/15-10/31; 1,268 AUM's, 1,811 HM's	170-324 head; 1,028-1,268 AUM's	Total non-use taken in 2000 & 2002 thru 2004

Double A Allotment

Prior to 1934 the Double A Allotment was unfenced and grazed by both sheep and cattle. In 1909, grazing permits were issued to a W. H. Campbell for 1,050 adult cattle (yearlong) and 4,000 sheep to run from April 10 to November 20. Another permit was issued to Mr. Ohaca for 2,000 sheep (season unknown).

Cattle numbers were reduced in 1910, 1913, 1915, 1916, 1918, and 1925, based on resource conditions and as the permit changed hands.

The Ohaca sheep permit was reduced to 2,000 head in 1912 following a transfer to the Martin & Martin Company. In 1919 the Ash Creek Cattle Company bought them out and the sheep permit was changed to cattle, with a 20% reduction in animal numbers. In 1924, the Ash Creek Cattle Company was issued a grazing permit for 1,240 adult cattle and 12 horses yearlong, and 748 adult cattle seasonally (4/1-11/30).

The permit transferred to the Three V Livestock Company in 1925 and was changed to sheep in 1927; 11,500 head were permitted from May 1 to October 15 but it appears that actual use was 6,000 sheep and non-use was taken for the remainder. In 1934 the permit was changed back to adult cattle; 972 head yearlong.

Cattle numbers were reduced again in 1940 to 622 adult cattle yearlong. Permitted numbers stayed put until 1969 when the allotment was changed to seasonal use (3/1-10/31); 980 yearling cattle and 10 horses were permitted.

In 1975 the allotment converted back to sheep grazing with 4,225 head permitted from May 26 to October 15. Numbers were reduced throughout the 1970's and early 1980's with 2,862 permitted from May 20 to October 31 in 1982.

The allotment was converted back to cattle when Don Brackin acquired it in 1983, with 250 adult cattle permitted from November 1 to May 31.

Since 1983 permitted numbers and season of use has stayed virtually the same at 250 adult cattle from November 1 to May 31. Actual use during that period varied with partial non-use taken 14 times in those 26 years (54% of the time). The current permittees acquired the permit in 2004 for 250 adult cattle from November 1 to May 14 (1,603 HMs). See Table 2 for the history of use from 1940 through 2008.

Table 2. Double A Allotment History of Use from 1940 to 2008.

Year(s)	Permitted Use Number and AUM's on Double A Allotment	Actual Use Number and AUM's	Comments
1940-1962	622 adult cattle yearlong; 7,464 AUM's	356-690 head; 1,415-7,622 AUM's	
1963-1968	622 adult cattle yearlong; 7,464 AUM's	688-800 yearlings; 4,441-6,400 AUM's	
1969-1974	980 yearling cattle from 3/1-10/31; 10 horses from 3/1-10/31 7,920 AUM's	674-1094 head; 5,472-8,750 AUM's	Total non-use taken in 1973
1975-1976	4,225 sheep from 5/26-10/15;	Unable to determine; Incomplete data	Partial non-use taken in both years; about 25%
1977-1978	4,225 sheep from 5/20-10/31;	Unable to determine; Incomplete data	Partial non-use taken in both years; ~10-30%
1979-1980	3,225 sheep from 5/20-10/31;	Unable to determine; Incomplete data	Partial non-use taken in both years; about 25%
1981-1982	2,862 sheep from 5/20-10/31;	Unable to determine; Incomplete data	Partial non-use taken in 1981; about 25%
1983-2003	250 adult cattle from 11/1-5/31; 2,116 AUM's, 1,603 HM's	30-250 head; 207-1,934 AUM's	
2004-2008	250 adult cattle from 11/1-5/14; 2,116 AUM's, 1,603 HM's	160-250 head; 1,000-1,934 AUM's	Partial non-use in 14 out of the last 26 years

Since the current livestock operator acquired the permits the two allotments have been managed as one yearlong operation with summer use primarily on Corva and winter use primarily on Double A.

DESIRED CONDITIONS, GOALS AND OBJECTIVES

It is important to note several historic activities which have altered natural conditions so much that trends cannot be reversed and a new environmental "baseline" exists. These historic activities include:

- Grazing of cattle has occurred for more than 100 years. In the 1870s, ranchers began grazing cattle with the numbers of cattle peaking in 1891. Cattle numbers have been greatly reduced since the turn of the century as better management strategies have been implemented;
- Utilization levels on vegetation from cattle have declined over time as well;
- Past wildlife grazing, specifically from elk, increased from the 1950s to peak numbers in the mid-1980s. Utilization levels from elk on vegetation have increased as their population numbers have increased.
- The Double A Wild Burro Territory was established following the Wild Horse and Burro Act. Burro numbers are to be maintained at 22 adults; a gather (collection) is warranted when numbers reach 36-44 adults. The 2008 survey counted 58 adults and 5 juveniles; the May 2009 survey counted 32 adults and 5 juveniles; and the June 2009 survey counted 61 adults and 12 juveniles. The 2009 figures are believed to represent from 35-70% of the total population.

The overall desired condition is maintenance of sustainable ecosystem within and surrounding the allotments, in which livestock grazing does not impair important ecosystem functions, such as maintaining soil stability and productivity, and maintaining vegetation diversity and productivity.

Specific desired conditions that apply to the Corva and Double A Allotments include the following:

Vegetation

- Maintain a stable to upward trend in total plant cover and range condition.
- Provide for a diversity of cool and warm season plants and maintain a stable to upward trend in cool season grasses.
- Protect Threatened, Endangered, and Sensitive plant species from adverse effects caused by livestock grazing and grazing management activities.
- Eradicate or control as many existing populations of noxious weeds as possible and prevent new introductions of noxious weeds caused by livestock management activities.

Soils and Watershed

- Minimize erosion caused by livestock grazing and grazing management activities by maintaining a stable to upward trend in soil condition and maintaining or increasing vegetative cover across the allotment.
- Protect watershed resources such as ephemeral lakes and ephemeral stream channels and downstream water bodies from adverse effects caused by livestock grazing and grazing management activities.

Wildlife

- Maintain sufficient levels of cover and forage throughout the grazing period to support wildlife populations utilizing the allotment.
- Protect Threatened, Endangered, and Sensitive wildlife species from adverse effects caused by livestock grazing and grazing management activities.

Recreation and Heritage

- Manage livestock grazing to minimize adverse effects on recreation activities and developments.
- Protect heritage resources from adverse effects caused by livestock grazing and grazing management activities.

MANAGEMENT STRATEGY

Livestock grazing is authorized on the Corva and Double A Allotments under the terms and management prescription described below.

Permitted livestock will be for 250 head of adult cattle (cow-calf) year-round (3,000 AUMs and 3,000 HMs). Forage utilization will allow up to 40 percent use by cattle and/or wildlife at the end of the cattle grazing season. This includes "conservative" grazing intensity, which is measured before the end of the growing season and is used in determining when livestock will move to the next pasture in the rotation, in combination with other factors such as weather patterns, likelihood of plant regrowth, and previous years' utilization levels.

The current grazing management system will remain in place which incorporates yearlong rest and seasonal deferment, with an emphasis on spring deferment. All pastures, except the upper elevation pastures that receive significant snowfall, are available for use during the year to increase seasonal deferment. Spring deferment, from March 15 to June 15, will include minimizing the number of pastures used during this time period, and not using the same pasture again the following spring.

Adaptive Management

This AMP includes the continued use of adaptive management which provides more flexibility to adjust the timing, period and occurrence of cattle grazing, movement of cattle within the allotment, and cattle numbers. If adjustments are needed, they are implemented through the Annual Operating Instructions, which would adjust numbers so cattle use is consistent with current productivity. This allows plant, soil, and watershed conditions to be maintained or improved while range improvements are implemented over time. An example of a situation that could call for adaptive management adjustments is drought.

Adaptive management is designed to provide sufficient flexibility to adapt management to changing circumstances. If monitoring indicates that desired conditions are not being achieved, management will be modified in cooperation with the permittee. Changes may include administrative decisions such as the specific number of livestock authorized annually, specific dates of grazing, class of animal or modifications in grazing area rotations. However, such changes will not exceed the limits for timing, intensity, period, number, occurrence and frequency of cattle grazing defined in this AMP.

RESOURCE PROTECTION MEASURES

The following grazing practices were selected for the Corva and Double A Allotments through the integrated resource management process:

- *Grazing systems are alternately rested and grazed in a planned sequence.* Livestock rotate in a planned grazing system that alternates rest and graze periods throughout a given year and from year to year. A deferred-rotation grazing meets this practice.
- *Grazing at a level that would maintain enough cover to protect the soils and maintain or improve the quantity and quality of desired vegetation.* This practice would be applied through the utilization guidelines for the action alternatives.
- *Fencing to improve livestock management, control access, prevent soil loss, and improve water quality*. The proposed water lots will allow the permittee to control access to water for cattle at the six selected stock tanks. By closing or opening up these water lots, the permittee can improve management of when and where cattle graze in the main pasture.

RANGE IMPROVEMENTS

Existing Structures

Range improvements (fences, waters, handling facilities, etc.) are critical components of any grazing management plan. All range improvements assigned to the permittee (shown in Tables 8 & 9) need to be maintained in order to facilitate proper management of the allotment.

Permittees are required to follow the District's Heavy Equipment Policy prior to beginning any ground disturbing activities which may require an archaeological survey and/or wildlife clearances.

New Construction

New improvements identified in the 2009 Environmental Analysis are (also see Figure 3):

- A water pipeline system supplied from Double A Lake (located on private land) would be developed to improve water distribution and reliability on the Double A Allotment north of the railroad tracks. Approximately 30 miles of pipeline would be installed below ground with 1 storage tank and 15 troughs (drinkers) for livestock, burro, and wildlife use. The pipeline would primarily follow existing road ways.

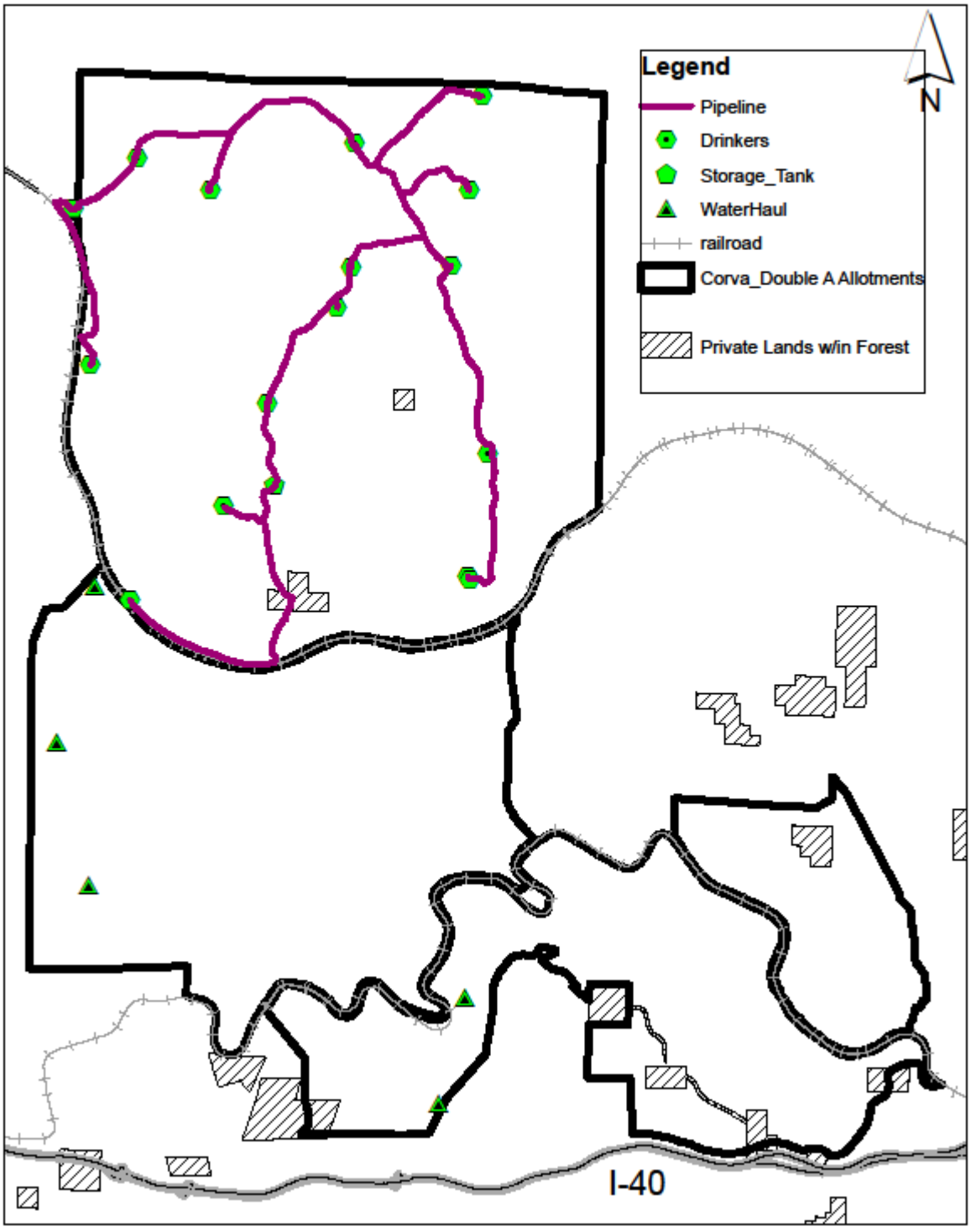
  The majority of troughs would be installed adjacent to existing stock tanks in order to limit additional disturbances. The pipeline system would be completed in phases, and each phase would be completed only when funding is acquired. As phases of this pipeline are completed, we would evaluate the need for the remaining phases. A power line right-of-way would also be established from the railroad grade to Double A Lake along an existing road in order to provide electricity for a water pump. Individual drinkers would be turned off, and back on, to manage grazing intensity levels in the surrounding area.

- Five water haul sites would be set up with storage tanks and drinkers; three in the Double A South Pasture, and 2 on Corva (one each in Tin House and Winter Camp Pastures). These drinkers would be used when there is adequate forage in these areas to support livestock use, but when water is limited. The storage tanks would be located adjacent to existing roads, and would be turned off when the grazing intensity limits are reached to discourage continued livestock grazing for that particular area. Water haul sites would provide a more reliable source of water relative to earthen stock tanks. The permittee would not be required to haul water for wildlife.

- Six waterlots would be constructed or reconstructed around existing stock tanks to control access (Bunker, Dunbar, Hop, Red, Section 2 and Toughy tanks). The waterlots would be open or closed to control the movement of cattle within the allotments. The waterlots would be constructed with wildlife jumps to minimize wildlife impacts. A small loading/working facility (approximately 50' X 100') would also be added to the Brown Tank Waterlot.

- Approximately 1.5 miles of fence would be removed from the Corva and Middle Pastures, creating one large pasture. Another 2 to 2.5 miles of fence would be removed from the Orr Pastures (Upper, Lower, Bull). These fences were only necessary when the Corva Allotment was used year-long.

Figure 3. New Range Improvements



MONITORING

Monitoring can include one or more of the following activities: permit compliance, allotment inspections, range readiness, forage production, rangeland utilization, condition and trend, soil condition, noxious weeds, and threatened and endangered species. Monitoring frequency varies by each activity and may be accomplished by either the permittee and/or Forest Service personnel.

Permit Compliance: Throughout each grazing season Forest Service personnel would monitor to determine accomplishments of the permit terms and conditions, the AMP, and the AOI.

Allotment Inspections: Allotment inspections are a written summary documenting compliance monitoring to provide an overall history of that year's grazing. This document may include weather history, the year's success, problems, improvement suggestions for the future, and a monitoring summary.

Range Readiness: Forest Service personnel and/or the grazing permittee would assess range readiness prior to cattle coming onto spring pastures to determine if vegetative conditions are ready for cattle grazing. The range is generally ready for grazing when cool season grasses are leafed out, forbs are in bloom, and brush and aspen are leafed out. These characteristics indicate the growing season has progressed far enough to replenish root reserves so that grazing will not seriously impact these forage plants.

Rangeland Utilization: Long-term condition and trend monitoring is the primary standard for monitoring of this grazing management system. Utilization is used as a tool to understand and achieve the goals of long-term management. Utilization guidelines are intended to indicate a level of use or desired stocking rates to be achieved over a period of years.

Forage utilization will allow up to 40 percent use by cattle and/or wildlife at the end of the cattle grazing season. Cattle would move when seasonal utilization in a pasture approaches a "conservative" level (approximately 30-40 %) before August 30. The pasture would not be grazed again during the same grazing season.

Conservative seasonal utilization is an approximate value because it takes into account any additional growth which might occur later that year and considers season of use, wildlife use, weather conditions, availability of forage, and water in pastures. This seasonal utilization level leaves residual cover for wildlife and soils and provides for long term health of the grazed plants.

If monitoring shows utilization rates exceed the utilization guideline in a given year, the grazing schedule and/or permitted numbers would be adjusted the following year so utilization guidelines are not exceeded again. If utilization is exceeded after these adjustments are made, then the grazing management system would be changed to ensure this does not happen in the future.

Utilization measurements (ocular or actual) will be taken in key areas which will reflect grazing effects within the allotment. Utilization guidelines are not intended as inflexible limits. Utilization measurements can indicate the need for management changes prior to this need being identified through long term monitoring. Utilization data would not be used alone, but would be used along with climate and condition/trend data, to set stocking levels and pasture rotations for future years.

Condition and Trend: Watershed and vegetative condition and trend monitoring will help determine the effectiveness of the allotment management plan, and long-term range and watershed trends.

Parker Three-Step and paced transect monitoring points were established throughout this allotment in the 1950-1960s. These transects are one of the best historic records of range condition and trend. The photo points and vegetative ground cover data show how the site has changed over time. Canopy cover and frequency plots were placed with the Parker Three-Step transects in 2008 to add to this historic data.

Ocular plant canopy cover 0.10-acre plots were used to compare existing conditions with potential and desired vegetative community conditions. Over time, these plots will show how canopy cover changes. Canopy cover will provide an indication of how plants are growing, assuming that if they are getting bigger and occupying more space they are doing well and can be a relative gauge of vigor.

Frequency and ground cover data were collected using the widely accepted plant frequency method (Ruyle 1997). These plots will monitor trends in plant species abundance, plant species distribution, and ground cover. This will provide information on plant composition and additional information on regeneration.

These transects will be read at least every 10 years by Forest Service personnel. These plots will help determine the effectiveness of current management.

Precipitation: Precipitation is currently recorded at the Flagstaff National Weather Service Office at Bellemont. Precipitation data may be recorded within or near the allotments for more localized information. Precipitation data may be recorded throughout the year and summarized in the annual inspection. This data assists managers with forage utilization and production data collection.

Noxious Weeds: Noxious weeds located in these allotments would be treated as necessary. The permittee and Forest Service would coordinate the weed inventory and treatment. Noxious weed monitoring is carried out at the same time allotment inspections are conducted. As noxious weed populations are found they are mapped, monitored, and treated. Treatment methods will follow guidelines established in the “Final Environmental Impact Statement for Integrated Treatment of Noxious or Invasive Weeds” (USDA 2005).

GRAZING CAPABILITY AND CAPACITY

Carrying capacity for this AMP is based on; actual use data, cattle and wildlife use patterns, cattle health and condition, condition and trend determinations, TES soil survey, forage production measurements and estimates, and professional opinion. The Annual Operating Instructions (AOI) would adjust livestock numbers and/or length of grazing season to match forage production in a given year with the grazing system to meet goals of maintaining or improving conditions.

The Corva and Double A Allotments contain approximately 56,928 acres. Of these, a Full Capacity rating for livestock is given to approximately 24,538 acres (43 percent). Areas given a Potential Capacity classification cover 15,358 acres (27 percent), and a No Capacity classification is given to approximately 17,032 acres (30 percent). See Table 3.

Grazing capability of a land area is dependent upon the interrelationship of the soils, topography, plants and animals. Grazing capability is expressed as one of three capacity classes:

Full Capacity (FC) – areas that can be used by grazing animals under proper management without long-term damage to the soil or vegetative resource. They must also produce a minimum of 100 pounds per acre of forage and are on slopes less than 40 percent.

Potential Capacity (PC) – areas that could be used by grazing animals under proper management but where soil stability is impaired, or range improvements are not adequate under existing conditions to obtain necessary grazing animal distribution. Grazing capacity may be assigned to these areas, but conservative allowable use assignments must be made.

No Capacity (NC) – areas that cannot be used by animals without long-term damage to the soil resource or plant community, or are barren or unproductive naturally. In addition, it includes areas that produce less than 100 pounds per acre of forage and/or are on slopes greater than 40 percent. Grazing capacity is not assigned to sites with a "no capacity" classification.

Table 3. Grazing Capacity

Allotment	Full Capacity Acres	Partial Capacity Acres	No Capacity Acres	Total
Corva	7,383	2,614	3,266	13,263
Double A	17,155	12,744	13,766	43,665
Total	24,538	15,358	17,032	56,928

Forage production varies considerably from site to site; depending on soils, moisture availability and overstory density. The main forage ground cover species are blue grama (*Bouteloua gracilis*), squirreltail (*Elymus elymoides*), and western wheatgrass (*Pascopyrum smithii*), with occurrences of muttongrass (*Poa fendleriana*) and three-awn (*Aristida purpurea*).

Livestock, elk, and burro use is calculated within this carrying capacity estimate (Table 4). The following numbers were used for carrying capacity estimates: 1) a 40 percent use levels for cattle and elk, 2) 26 lbs/day use for cattle on perennial grass, 3) ten lbs/day use for burro on perennial grass.

Table 4. Grazing Capacity Estimates for the Corva and Double A Allotments

Grazing Capacity Estimates	Corva/ Double A		Burro Territory
A) Forage Required by Permitted Livestock (250 head yearlong)	2,372,500 lbs	Forage Required by 35 Burros per Year	76,608 lbs
B) Grazing Capacity (FC & PC acres only with established utilization standards)	4,771,125 lbs	Grazing Capacity (FC & PC acres in Burro Territory)	2,199,006 lbs
C) Total Estimated Allotment Forage Production (FC, PC, and NC acres)	21,543,912 lbs	Total Estimated Territory Forage Production (FC, PC, and NC acres)	10,454,771 lbs
D) Forage required by permitted livestock as a percentage of the Grazing Capacity (A÷B)	50%	Forage required by burros as a percentage of Grazing Capacity (A÷B)	3%

Table 5. Grazing Capacity Estimates in Burro Territory

Grazing Capacity Estimates for 250 Cattle and 150* Burros in Burro Territory (NE, NW, SE, SW pastures, and traps) *Estimate of current burro population	
A) Forage Available to Permitted Livestock	2,199,006 lbs
B) Forage Required by 150 Burros yearlong	328,648 lbs
C)Total Estimated Territory/Pasture Forage Production (FC, PC, and NC acres)	10,454,771 lbs
D) Forage required by livestock as a percentage of the Total Forage Production (A÷C)	21%
E) Forage required by burros as a percentage of the Total Forage Production (B÷C)	3%
F) Pounds of Forage Remaining for Wildlife, soil protection, etc	7,927,117 lbs

RANGE CONDITION AND TREND

The Forest Service has been using the Parker Three-Step Method to evaluate condition and trend of rangelands since 1954. This method represents one of the longest records of apparent vegetation changes on national forests. Livestock grazing affects the vegetation and soil, and this method is one technique to evaluate what impacts are occurring over time. Another method commonly used is Paced Transects. Paced Transects are used to supplement information on range condition and trend, delineate vegetation condition classes and provide additional data on composition, vigor, cover, and soil conditions over the larger area.

Range condition is a subjective expression (very poor, poor, fair, good, and excellent) and is evaluated relative to a standard that encompasses the composition, density, and vigor of the vegetation and the physical characteristics of the soil. Range trend expresses the direction of change in range condition over time in response to livestock management and other environmental factors.

It is important to note that the methods used to evaluate range condition and trend are generally considered a process for determining range condition and trend relative to the lands ability, or value for grazing livestock and do not provide information of ecological status (USDA Rangeland Analysis and Management Training Guide 1997). As such, there is not a strong correlation between range condition class and ecological condition; an area could be in a poor or fair condition simply because the area has a low value for livestock grazing.

Monitoring data were evaluated by a Kaibab National Forest interdisciplinary team to assess changes in range conditions on the Corva and Double A allotments. Data were available from thirteen Parker Three Step method transects (Parker transect), one paced transect, two exclosures, and Terrestrial Ecosystem Survey. Parker transect long-term monitoring data were collected in 1954, 1960, 1961, 1968, 1979 (one transect), 1981, 1982, 1993, and 2001 (2 transects) on the Allotments. Paced transect data were collected in 2008 to supplement the Parker transect data. Terrestrial Ecosystem Survey data were collected between 1979 and 1986.

Table 6. Range Condition Scores from Parker Transect Data

Corva	1954	1961	1968	1979	1982	1993
C1	41	45	47	-	48	54
C2	33	32	33	-	40	49
C3	33	19	24	-	29	26
C4	38	25	35	-	29	29
C5	42	21	31	-	38	47
C6	41	26	25	-	34	49
C7	34	28	28	-	32	38
C8	-	14	19	-	20	27
C9	-	-	-	16	51	49
Double A	1960	1968	1981	2001		
C1	33	34	46	28		
C2	30	33	40	35		
C3	29	39	57			
C4	26	27	28			
C5	22	Destroyed between 1960 & 1968				
C6	30	36	69			
C7	22	26	29			

The health of vegetation on the Corva and Double A Allotments is measured through range condition and trend and is called range management status. Range condition and trend are a subjective expression of the status or health of the vegetation relative to their combined potential to produce a sound and stable biotic community. Soundness and stability are evaluated relative to a standard that encompasses the composition, density, and vigor of the vegetation.

Rangeland management status is also a comparison of existing vegetation and soil conditions to either the potential natural plant community or desired plant community and vegetation trend. Rangeland management status is considered to be in satisfactory condition when the existing vegetation community is similar to the desired condition, maintaining or improving vegetation trend, and/or short-term objectives are being achieved to move the rangeland toward the desired condition. Similarity is a comparison of existing vegetation and soil conditions to either potential natural community or desired plant community.

The assessment of current conditions and trends in this analysis provides an overview for large areas and does not necessarily uniformly apply to all areas on the Corva and Double A Allotments. Range management status is generally satisfactory throughout the allotments. Unsatisfactory conditions occur in portions of the grasslands and within dense ponderosa pine and pinyon-juniper communities where trees are encroaching on the understory grasses.

Plant community similarity is analyzed when determining plant community conditions. Similarity is the comparison of existing vegetation and soil conditions to either the potential natural community or the desired plant community. Of the sixteen plots, ten are located in the pinyon juniper plant community; one has a high-similarity to the desired plant community, three have a mid-similarity, three have a mid/high-similarity, and one has a low/mid-similarity. Similarity couldn't be determined at the 2 exclosures because there were different treatments applied to them sometime in the past. Four plots are located in the grassland plant community; two have a mid/high-similarity to the desired plant community and four have a mid-similarity.

Table 7. Plant Community Similarity

Plant Community	High	Mid/High	Mid	Low	Unable to Determine
Pinyon/Juniper	1	3	3	1	2
Grassland		2	4		

Approximately 39,804 acres have satisfactory rangeland management status and a mid to high-similarity to the desired natural community with a static trend. Cattle currently graze a large portion of these satisfactory acres. Approximately 1,323 acres have unsatisfactory rangeland management status and a low-similarity to the desired natural community with primarily static but some downward trends. Unsatisfactory rangeland management status acres include unsatisfactory and impaired soils in dense juniper stands. Approximately 15,358 acres are on steep slopes that cattle don't normally graze.

Climate conditions are one of the major contributing factors, if not the primary factor, affecting range condition and trend. Generally, drought conditions occurred in the 1950s and early 2000s. Wet conditions occurred in the 1970s through the 1990s and in 2005. Plant species change with these dry and wet periods (SRM 2006).

Changes in the density and diversity of cool-season perennial grasses are important factors in evaluating range condition and trend. On the allotment, impacts from drought periods occurring after 1985 and changing precipitation patterns (drier winters and springs, late monsoons) are believed to be a significant factor in the loss of cool season grasses and, as a result, a decline in range condition and trend. This is supported by Parker Three-Step Cluster data from an exclosure on the Pine Creek Allotment as well as a relic area on the Hat Allotment that has never been exposed to livestock grazing. Data collected from both sites shows similar declines in cool-season grasses and a decline in range condition and trend.

Since the Parker plots were established in 1954, range trends within the pinyon juniper and grassland communities of the Corva and Double A Allotments have varied. Plots in the pinyon juniper community remain static following some upward trends in the 1980's following wet years. Plots in the grassland community showed upward trends in the 1980's as well. However, as pinyon juniper trees encroach into these areas, grass, forb, and shrub production declines. This is reflected in the current static trends.

These range condition trends exist under the current cattle grazing system with a utilization guideline of 40 percent for cattle, elk and burros. Grazing has remained within this utilization guideline and cattle have been able to fully use the area for the full length of the grazing season. Cattle must be moved early if the utilization level is reached prior to planned rotations, or cattle may not enter an area if wildlife use already meets the 40 percent utilization guideline. Early moves or skipping areas has not been routinely needed under the current grazing system and has only occurred on occasion, mainly related to drought conditions.

The overall trend for the allotments is static. Increases in juniper and pinyon pine on some portions of the allotment are slowing an improvement in trend. Impacts from historic uses by cattle and wildlife, poorly located roads, cross-country vehicle traffic, flooding during snowmelt, and heavy thunderstorms may also slow improvements in trend.

Table 8. Corva Allotment Improvements

Improvement Number	Improvement Name	Improvement Details	Units in Place
7610	I DAM/CORVA FENCE	RANGE, ALLOTMENT BOUNDARY	1
7611	HAT/CORVA	RANGE, ALLOTMENT BOUNDARY	6
7614	HEARST/CORVA FENCE	RANGE, ALLOTMENT BOUNDARY	1
7616A	REED/CORVA FENCE	RANGE, ALLOTMENT BOUNDARY	2
7618	JUAN/CORVA FENCE	RANGE, ALLOTMENT BOUNDARY	1
7667	HEADQUARTERS TRAPS FENCE	RANGE, ALLOTMENT INTERIOR	1
7668	HOUSE/HORSE FENCE	RANGE, ALLOTMENT INTERIOR	1
7670A	WINTER/TIN HOUSE FENCE	RANGE, ALLOTMENT INTERIOR	1
7671	TIN HOUSE/CORVA	RANGE, ALLOTMENT INTERIOR	1
7673A	MIDDLE/BRIDGE FENCE	RANGE, ALLOTMENT INTERIOR	1
7674	MIDDLE/BROKEN FENCE	RANGE, ALLOTMENT INTERIOR	1
7676	BROKEN/BRIDGE FENCE	RANGE, ALLOTMENT INTERIOR	2
7677	SUPAI/BRIDGE FENCE	RANGE, ALLOTMENT INTERIOR	1
7714	WINTERCAMP TANK	WATER SYSTEM	1
7715	TINHOUSE TANK	WATER SYSTEM	1
7716	CROW TANK	WATER SYSTEM	1
7717	CORVA TANK	WATER SYSTEM	1
7718	HILLTOP TANK	WATER SYSTEM	1
7719	LITTLE ROD TANK	WATER SYSTEM	1
7720	ROGERS NATURAL TANK	WATER SYSTEM	1
7722	WINTER CAMP WATERLOT	RANGE, WATER SOURCE	1
7723	HILLTOP WATERLOT	RANGE, WATER SOURCE	1
7724	LITTLE ROD WATERLOT	RANGE, WATER SOURCE	1
7725	LOWER/UPPER ORR FENCE	RANGE, ALLOTMENT INTERIOR	1
7726	DOUBLE DAM	WATER SYSTEM	1
7727	DOUBLE DAM WATERLOT	RANGE, WATER SOURCE	1
7728	BROKEN DAM	WATER SYSTEM	1
7729	HORSE TANK	WATER SYSTEM	1
7731	COOPER TANK	WATER SYSTEM	1
7732	COOPER WATERLOT	RANGE, WATER SOURCE	1
7735	BIG SUPAI TANK	WATER SYSTEM	1
7736	PETERS TANK	WATER SYSTEM	1
7737	13 MILE TANK	WATER SYSTEM	1
7915	SERENO TANK	WATER SYSTEM	1
7915A	SERENO TANK WATERLOT	RANGE, WATER SOURCE	1
7982	HEADQUARTERS TANK	WATER SYSTEM	1
7985	RODGERS WATERLOT	RANGE, WATER SOURCE	1
7986	ROCK WATERLOT	RANGE, WATER SOURCE	1
8040	MOUNTAIN TANK	WATER SYSTEM	1
8041	BIG TANK	WATER SYSTEM	1
8043	LOWER TANK	WATER SYSTEM	1
8044	SPLIT TANK	WATER SYSTEM	1
8045	BRIDGE TANK	WATER SYSTEM	1

Corva Allotment Improvements, continued

Improvement Number	Improvement Name	Improvement Details	Units in Place
8404	13 MILE CORRAL	MULTIPLE PENS	1
8405	BRIDGE TANK WATERLOT	RANGE, WATER SOURCE	1

Table 9. Double A Allotment Improvements

Improvement Number	Improvement Name	Improvement Details	Units in Place
7612	PART CR/AA FENCE	RANGE, ALLOTMENT BOUNDARY	1
7613	PART CR/ AA FENCE NORTH	RANGE, ALLOTMENT BOUNDARY	1
7617	JUAN/AA FENCE	RANGE, ALLOTMENT BOUNDARY	1
7622	UPPER JIM RIVER TANK	WATER SYSTEM	1
7662	MARTIN TRAP FENCE	RANGE, ALLOTMENT INTERIOR	2
7675	HDQTRS TRAPS FENCE	RANGE, ALLOTMENT INTERIOR	5
7756	BURRO SPR FENCE	RANGE, WATER SOURCE	1
7767	BURRO SPRING	SPRING WELL DEVELOPMENT	1
7833	MARTIN DAM TANK	WATER SYSTEM	1
7834	FRENCHMAN TANK	WATER SYSTEM	1
7835	SANDSTONE TANK	WATER SYSTEM	1
7836	JIM RIVER TANK	WATER SYSTEM	1
7837	PARADISE TANK	WATER SYSTEM	1
7838	MK TANK	WATER SYSTEM	1
7839	POLSON TANK	WATER SYSTEM	1
7840	POLSON WATERLOT FENCE	RANGE, WATER SOURCE	1
7841	SANDSTONE WATERLOT	RANGE, WATER SOURCE	1
7842	FRENCHMAN WATERLOT	RANGE, WATER SOURCE	1
7843	JIM RIVER WATERLOT	RANGE, WATER SOURCE	1
7844	PARADISE WATERLOT	RANGE, WATER SOURCE	1
7845	MESA TANK	WATER SYSTEM	1
7846	BUNKER TANK	WATER SYSTEM	1
7847	BUNKER WATERLOT FENCE	RANGE, WATER SOURCE	1
7856	WEST SIDE TANK	WATER SYSTEM	1
7857	BROWN TANK	WATER SYSTEM	1
7858	LOST TANK	WATER SYSTEM	1
7859	R R CORRAL	MULTIPLE PENS	1
7860	SECTION 2 TANK	WATER SYSTEM	1
7861	SCS TANK	WATER SYSTEM	1
7862	RED TANK	WATER SYSTEM	1
7863	STEIGER TANK	WATER SYSTEM	1
7865	CEDAR TANK	WATER SYSTEM	1
7866	CEDAR WATERLOT	RANGE, WATER SOURCE	1
7867	TOUGHY TANK	WATER SYSTEM	1

Double A Allotment Improvements, continued

Improvement Number	Improvement Name	Improvement Details	Units in Place
7931	AA BDRY FENCE	RANGE, ALLOTMENT BOUNDARY	1
7987	MESA WATERLOT FENCE	RANGE, WATER SOURCE	1
7988	UPPER SANDSTONE TANK	WATER SYSTEM	1
7989	SANTA FE TRAP FENCE	RANGE, ALLOTMENT INTERIOR	1
7990	WELCH TANK	WATER SYSTEM	1
7991	LOST WATERLOT FENCE	RANGE, WATER SOURCE	1
7992	WEST SIDE WATERLOT	RANGE, WATER SOURCE	1
7993	WELCH WATERLOT FENCE	RANGE, WATER SOURCE	1
7994	BROWN WATERLOT FENCE	RANGE, WATER SOURCE	1
7995	SEC 2 WATERLOT FENCE	RANGE, WATER SOURCE	1
8005	DUNBAR TANK	WATER SYSTEM	1
8015	ANTOLINI TANK	WATER SYSTEM	1
8093	SCS WATERLOT FENCE	RANGE, WATER SOURCE	1
8204	NW/SW PASTURE	RANGE, ALLOTMENT INTERIOR	3
8205	SHOVEL TANK	WATER SYSTEM	1
8206	DOG TANK	WATER SYSTEM	1
8383	NW/NE PASTURE	RANGE, ALLOTMENT INTERIOR	3
8384	MK TANK CORRAL	MULTIPLE PENS	1
8390	HOP TANK	WATER SYSTEM	1
8391	DOUBLE A/NE FENCE	RANGE, ALLOTMENT INTERIOR	3
8393	TOP TANK	WATER SYSTEM	1
8408	DOUBLE A STORAGE TANK	WATER STORAGE TANK	1
8409	DOUBLE A TRICK TANK	TRICK TANK APRON	1
8410	DOUBLE A TT DRINKER	WATER TROUGH	1

Example Grazing Schedules

These grazing schedules are provided as examples only. Schedules and livestock numbers will be determined each year depending on weather and the permittees input, via the AOIs.

Year 1 Grazing Location	Graze Dates	Livestock Number
SW	11/1 – 2/15	170
NE	11/1 – 2/15	80
SE	2/16 – 5/31	160
NW	2/16 – 5/31	90
Bull, Horse, AA Trap	6/1 – 6/30	244
South	Rest	0
Corva, Middle	7/1 – 7/31	244
Bridge, Broken	8/1 – 8/31	244
Upper/Lower Orr, Bull	9/1 – 10/15	244
Winter Camp/Tin House	10/16 – 11/30	244
Supai	Rest	0
Road, House, Horse	6/1 – 9/30	6 horses
Year 2* Grazing Location	**Graze Dates**	**Livestock Number**
South	12/1 – 3/31	244
Bull, Horse, AA Trap	4/1 – 4/8	244
SW	4/9 – 6/15	244
SE	6/16 – 8/15	244
South	8/16 – 8/20	244
NE	Rest	0
NW	Rest	0
Upper/Lower Orr, Bull	8/21 – 9/15	244
Supai, Bridge	9/16 – 10/31	244
Winter Camp/Tin House	Rest	0
Corva, Middle	Rest	0
Broken	6/1 – 9/30	6 horses
Road, House, Horse	Rest	0
Year 3* Grazing Location	**Graze Dates**	**Livestock Number**
SE	11/1 – 1/31	244
NE	2/1 – 3/15	244
NW	3/16 – 5/5	244
Bull, Horse, AA Trap	5/6 – 6/6	244
South	6/7 – 8/15	244
SW	Rest	0
Corva, Middle	8/16 – 9/15	244
Upper/Lower Orr, Bull	9/16 – 11/15	244
Winter Camp/Tin House	11/16 – 12/31	244
Supai, Bridge, Broken	Rest	0
Road, House, Horse	6/1 – 9/30	6 horses

*****Assume the first and second sections of pipeline and water hauls are installed, respectively.